

## **FIELD EMISSION DISPLAY WITH SMOOTH ALUMINUM FILM**

### Abstract of the Disclosure

This invention provides a conductive aluminum film and method of forming the same, wherein a non-conductive impurity is incorporated into the aluminum film. In one embodiment, the introduction of nitrogen creates an aluminum nitride subphase which pins down hillocks in the aluminum film to maintain a substantially smooth surface. The film remains substantially hillock-free even after subsequent thermal processing. The aluminum nitride subphase causes only a nominal increase in resistivity (resistivities remain below about 12  $\mu\Omega\text{-cm}$ ), thereby making the film suitable as an electrically conductive layer for integrated circuit or display devices.

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